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IMPORTANT SAFETY INSTRUCTIONS

READ AND FOLLOW ALL INSTRUCTIONS CAREFULLY

1) **DANGER:** *Risk of Injury.* The suction fittings in this hot tub are sized to match the specific water flow created by the pump. Should the need arise to replace the suction fittings or the pump, be sure that the flow rates are compatible. Never operate the hot tub if the suction fittings are broken or missing. Never replace a suction fitting with one rated less than the flow rate marked on the original suction fitting.

2) **ELECTRICAL SUPPLY:** The electrical supply for this product must include a suitably rated switch or circuit breaker to open all ungrounded supply conductors to comply with section 422-20 of the National Electrical Code, ANSI/NFPA 70. The disconnect must be readily accessible and visible to the hot tub occupant but installed at least 5 feet (1.5m) from the hot tub water.

3) **WARNING: To Reduce the Risk of Injury:**

a) The water in a hot tub should never exceed 104 °F (40 °C). Water temperatures between 100 °F (38 °C) and 104 °F (40 °C) are considered safe for a healthy adult. Lower water temperatures are recommended for young children and when hot tub use exceeds 10 minutes.

b) Since excessive water temperatures have a high potential for causing fetal damage during the early months of pregnancy, pregnant or possibly pregnant women should limit hot tub water temperatures to100 °F (38 °C). If pregnant, please consult your physician before using a hot tub.

c) Before entering the hot tub, the user should measure the water temperature with an accurate thermometer since the tolerance of water temperature-regulating devices may vary as much as +/- 5 °F (2 °C).

d) Persons suffering from obesity or a medical history of heart disease, low or high blood pressure, circulatory system problems or diabetes should consult a physician before using a hot tub.

SAFETY INFORMATION

When using this electrical equipment, basic safety precautions should always be followed, including the following:

WARNING: Children should not use hot tubs without adult supervision.

WARNING: Do not use hot tubs unless all suction guards are installed to prevent body and hair entrapment.

WARNING: People with infectious diseases should not use a hot tub.

WARNING: To avoid injury, exercise care when entering or exiting the hot tub.

WARNING: Do not use drugs or alcohol before or during the use of a hot tub to avoid unconsciousness and possible drowning.

WARNING: Pregnant or possibly pregnant women should consult a physician before using a hot tub.

WARNING: Water temperature in excess of 38 °C (100 °F) may be injurious to your health.

WARNING: Before entering the hot tub, measure the water temperature with an accurate thermometer.

WARNING: Do not use a hot tub immediately following strenuous exercise.

WARNING: Prolonged immersion in a hot tub may be injurious to your health.

WARNING: Do not permit electric appliances (such as lights, telephone, radio, television, etc.) within 5 feet (1.5m) of this hot tub unless such appliances are built-in by the manufacturer.

CAUTION: Maintain water chemistry in accordance with manufacturer's instructions.

WARNING: The use of alcohol or drugs can greatly increase the risk of fatal hyperthermia in hot tubs.

WARNING: People using medication and/or having an adverse medical history should consult a physician before using a spa or hot tub.

SAVE THESE INSTRUCTIONS

a) **READ AND FOLLOW ALL INSTRUCTIONS.**

b) A green colored terminal or a terminal marked G, Gr, Ground, Grounding or the symbol* is located inside the supply terminal box or compartment. To reduce the risk of electric shock, this terminal must be connected to the grounding means provided in the electric supply service panel with a continuous copper wire equivalent in size to the circuit conductors that supply this equipment.

c) At least two lugs marked "Bonding Lugs" are provided on the external surface or on the inside of the supply terminal box/compartment. To reduce the risk of electric shock, connect the local common bonding grid in the area of the hot tub to these terminals with an insulated or bare copper conductor not smaller than No. 6 AWG.

d) All field-installed metal components such as rails, ladders,

drains or other similar hardware within 5 feet (1.5m) of the hot tub shall be bonded to the equipment grounding buss with copper conductors not smaller than No. 6 AWG.

e) **SAVE THESE INSTRUCTIONS.**

HYPERTHERMIA

Prolonged immersion in hot water may induce hyperthermia. A description of the causes, symptoms, and effects of hyperthermia are as follows:

Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above the normal body temperature of 98.6°F (37°C). The symptoms of hyperthermia include drowsiness, lethargy, and an increase in the internal temperature of the body. The effects of hyperthermia include:

a) Unawareness of impending hazard;

b) Failure to perceive heat;

c) Failure to recognize the need to exit hot tub;

d) Physical inability to exit hot tub;

e) Fetal damage in pregnant women; and

f) Unconsciousness and danger of drowning.

CAUTIONS

1. Observe a reasonable time limit when using the hot tub. Long exposures at higher temperatures can cause high body temperature. Symptoms may include dizziness, nausea, fainting, drowsiness, and reduced awareness. These effects could possibly result in drowning.
2. Always test the hot tub water temperature before entering the hot tub. Enter and exit the hot tub slowly. Wet surfaces can be very slippery.
3. Proper chemical maintenance of hot tub water is necessary to maintain safe water and prevent possible damage to hot tub components.
4. Use the straps and clip tie downs to secure the cover when not in use. This will help to discourage unsupervised children from entering the hot tub and keep the hot tub cover secure in high-wind conditions. There is no representation that the cover, clip tie-downs, or actual locks will prevent access to the hot tub.
5. For exercise, the water should not exceed 90 °F (32 °C).

SET-UP AND DELIVERY GUIDELINES

Getting ready for delivery and setup of your new spa

LOCATION OF YOUR NEW SPA: Some points to consider

- How close is the spa from the exit or entrance to your house? (Consider the cold weather)
- Is the path to the spa clean of debris, sand, grass clippings? (So as not to track into spa)
- Is there any protection from wind, inclement weather?
- Can neighbors or passersby see the spa?
- If your spa is to be placed near where sprinklers may hit the wood skirt, shell or equipment, please adjust or cap them to prevent prolonged water exposure.

ELECTRICAL REQUIREMENTS: ALL SELF CONTAINED SPAS 120 OR 240 VOLT ELECTRIC SPA PACKS

- Your 120 volt spa pack requires an isolated (no other appliances or lights on this circuit at any time) 120 volt, 20amp circuit breaker.
- Extension cords are not to be used in conjunction with the operation of the spa. Low voltage damage could result, which is not covered by warranty.
- Depending on the model, your 240 volt spa will require a 40 or 50 amp dedicated circuit breaker, GFCI, with proper wire size for length of run.
- If you have any doubts, have your electrical system checked by a certified electrician.
  * **See Diagram 02 on Page 19**

SURFACE AND PAD REQUIREMENTS:

- Your new portable spa must be placed on a firm, flat and level surface, so the spa weight is supported uniformly. We recommend a 3-1/2"(93mm) thick concrete slab. Alternate decking methods may void warranty of spa shell .
- Please contact your Coast Spas dealer if you have any questions regarding location or placement of your new spa.

REQUIREMENTS FOR WOOD DECKING, GATES AND BALCONIES:

- Wood decking or balconies must be constructed to support 150 pounds per square foot (730 kg/m^2). Refer to local and current building codes in your area.
- Consult an engineer for live loads in your area.

Should your new spa need to go through a gate, the opening should be a minimum of 48 inches and up to 8.5' overhead clearance depending on the size of the unit.

START-UP INSTRUCTIONS

FILLING YOUR COAST SPA

- Your new spa has left the factory cleaned and polished. You may have to clean out any dirt that has accumulated during shipping. Use warm water and sponge or cloth.
- Be sure all fittings are connected, secure and hand tightened in the equipment enclosure. Your Coast Spa is shipped with fittings disconnected to ensure no damage or freezing occurs during the spa's route from our factory to your home.
- Fill your Coast Spa with your garden hose. Place the hose inside spa and secure the hose in place. Filling through the filter helps to allow most of the trapped air in the pumps and heater to be eliminated. Loosen the bleeder valve in the skimmer while filling.
- **Note:** Coast Spas recommends you do not fill your spa with hot water. Excessively hot water (over 107 deg F) may cause damage to components in the spa pack.
- **Also:** Do not fill your spa with water from a water softener. If your water is extremely hard your Coast Spas dealer can help you to remedy this problem.
- Continue filling the spa to half (1/2) way up the skimmer opening. Remove the hose and close the filter canister (see page 5 filter maintenance).

FILL INSTRUCTIONS FOR CASCADE SPA OWNERS ONLY

- The Cascade spa has a specific fill line. Located in the equipment enclosure, on the right-hand side, is a clear sight tube with a pre-marked (red) fill to line (8" up from floor of equipment enclosure).
- Fill the spa in the regular manner (see above) by placing your garden hose into the spa.
- Allow the water to spill over into the displacement tank, until the correct level is reached in the sight tube.
- Do not under fill or over fill as this could cause a spill-over problem when the spa is in use.
- Pump #1 must be programmed to circulate for 24 hours. Failure to do so could result in freezing during colder weather.
- The Cascade spa has a pressurized top load filter. Loosen bleed screw on filter lid before removing lock ring.
- When draining your Cascade spa please ensure you have drained all water using the sight glass as your guide.

CONTROL PANEL

Please read the specific CONTROL PANELS Card (see pages 11-18) pertaining to the spa side control and control box that has been supplied with your unit. This must be done before starting up your spa to prevent any damage to the unit.

INITIAL START-UP OF PUMPS (FOR SPAS WITH WIDE-MOUTH SKIMMER)

- Turn power **off** at the breaker.
- Make sure all union fittings are tightened and valves (Gate or Knife) are fully opened.

*** See Diagram 03 (above right)**

- Turn power on at the main breaker. Turn on pump #1. If circulation is not visible, turn off pump #1, open bleeder valve in skimmer cavity and allow air to escape. Re-tighten bleeder valve (finger tight only).

  Note: Air bleeder valve only needs to be loosened and not completely removed.

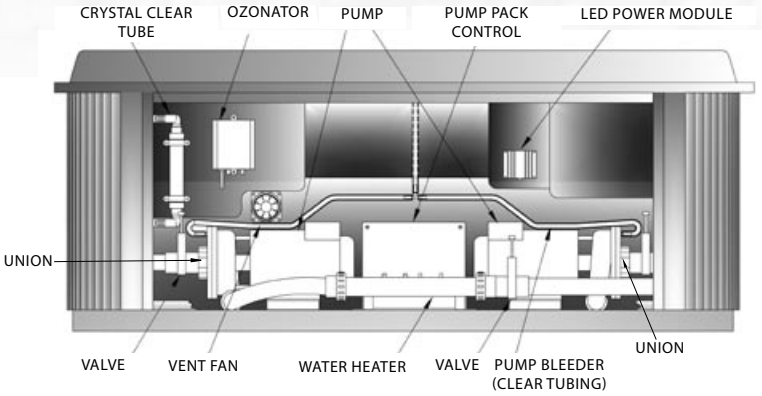
Turn on pump #1. Depending on the amount of air trapped in the pump, this step might need to be repeated a few times. If this fails to release air, gently loosen the union until water (and not air) comes out.

BLEEDER VALVE

- Once there is water flow from the jets, repeat the process for pump #2 until water flow is present when pump #2 is activated.
- Allow both pumps to circulate for 2-3 minutes before activating heater.
- Set the desired temperature using the heater control. button on your keypad and the spa will begin to heat. Depending on initial water temperature, reaching the

Diagram 03

TYPICAL INSTALLATION - Pump Bleeder (front view)



desired temperature may take 6-10 hours.

WARNING: DO NOT RUN SPA WITH GATE VALVES CLOSED OR RUN PUMP WITH NO WATER CIRCULATING IN SPA. THIS COULD DAMAGE PUMPS AND PUMP SEALS.

- Refer to page 11 or 13 for setting filter cycle and programming.

INITIAL START-UP OF PUMPS (FOR SPAS WITH FRONT ACCESS SKIMMER/FILTER)

- Turn power **off** at the breaker.
- Ensure all union fittings are tightened and valves (Gate or Knife) are fully opened (refer to Diagram 03 above).
- Turn power on at the main breaker. Turn on pump #1. If circulation is not visible, turn off pump #1, open bleeder valve on top of pump #1 and allow air to escape until water comes out steadily. Re-tighten bleeder valve (finger tight only). **Note:** Bleeder valve only needs to be loosened and not completely removed. If there is still no circulation, gently loosen the union until only water is present and no air.

*** See Diagram 03, above.**

- Allow both pumps to circulate for 2-3 minutes before activating heater.

  Note: If the water is freshly filled and below the set temperature, the heater will automatically come on.

- Set the desired temperature using the heater control button on your keypad and the spa will begin to heat. Depending on initial water temperature, reaching the desired temperature may take 6-10 hours.

  WARNING: DO NOT RUN SPA WITH GATE VALVES CLOSED OR RUN PUMP WITH NO WATER CIRCULATING IN SPA. THIS COULD DAMAGE PUMPS AND PUMP SEALS.

- Refer to page 11 or 13 for setting filter cycle and programming.

FILTER MAINTENANCE

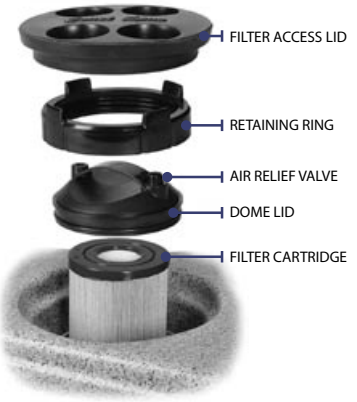
Filtration starts as soon as flow is steady through the filter. As the filter cartridge removes the dirt from the spa water, the accumulated dirt causes flow resistance.

CLEANING AND REPLACING FILTER CARTRIDGE

Your spa filter has been designed for quick and easy maintenance. The filter cartridge should be rinsed by hose once a week and cleaned with a cartridge cleaner once a month. A second filter cartridge is recommended and will speed up the process. This can be purchased from your Coast Spas dealer.

TOP LOAD FILTERS

- Turn power **OFF** at the breaker.
- Remove Filter access lid. Loosen air relief valve before removing retaining ring.
- Pull dome lid straight **up** to remove.
- DO NOT TWIST OR PULL DOME LID UP AT AN ANGLE. THIS COULD CAUSE DAMAGE TO THE FILTER CANISTER, ESPECIALLY IN FREEZING WEATHER. DO NOT REMOVE DOME LID IN ICY CONDITIONS!



- Remove filter cartridge and clean with a garden hose and a high-pressure nozzle. Periodically you may need to soak your filter in a "cartridge filter cleaner" to remove excess minerals and/or oils. You can purchase this cleaner at your Coast Spas dealer.
- Rinse filter thoroughly before installing. Clean o-ring on dome lid and apply a light film of silicone lubricant to o-ring. Do not use a petroleum-based lubricant as it could damage the o-ring. Consult your Coast Spas dealer.

- Place clean Cartridge in filter canister.
- Replace dome lid and re-tighten retaining ring (finger tight only).
- **NOTE:** MAKE SURE THE O-RING IS ON THE AIR RELIEF VALVE, AND IS **FINGER TIGHT** WHEN READY TO START PUMP. This O-ring should periodically be lubricated with a silicone lubricant.
- This is a good time to check the skimmer basket. Pull skimmer grate straight up, bring skimmer door (weir) forward and unscrew basket. Clean out debris and re-install. Follow the same procedure with the front access skimmer.

FRONT ACCESS SKIMMER/FILTER

- Turn power **OFF** at the breaker.
- Pull open skimmer weir door.
- Reach in and turn skimmer basket counterclockwise to line up flat section on basket.
- Pull straight up and out to remove basket.
- Remove diverter plate.
- Pull up on first of 2 filter cartridges.
- Grasp tab that is attached to second cartridge and pull up and out.
- Clean with a garden hose and high-pressure nozzle. Periodically you may need to soak your filter in a cartridge filter cleaner to remove excess minerals and/or oils. You can purchase this cleaner at your Coast Spas dealer.
- Rinse filter thoroughly before installing.
- Reverse this procedure to re-install the filter cartridges.
- Put pump #1 on low speed. This will help to pull the cartridges into place.

DRAINING & WINTERIZING YOUR SPA

DRAINING YOUR COAST SPA

After a period of 3-4 months, detergent residues from bathing suits and soap film will build up in your spa water. Once this happens, your spa water will appear cloudy and should probably be replaced.

- Turn power OFF at the breaker.
- Locate the drain valve (usually at the front left-hand corner of the skirt).
- Remove the safety cap and attach garden hose. Turn outer ring counterclockwise and pull outward on the garden hose. This will open the drain valve fully.
- Drain water to a convenient area. (Spa water may harm grass or plants if sanitizer levels are high.)
- When water begins to flow out of the hose, open the air relief valve located on filter lid.
- Your Coast Spa will drain except for a small portion left in the foot well. This can be removed with a sponge and pail.
- Once empty, clean as required.
- To finish, push garden hose forward and turn outer ring clockwise, remove garden hose and attach safety cap.

REFILLING YOUR COAST SPA

- Please follow the instructions on page 4, filling your spa.
- Follow start-up instructions.

WINTERIZING:

If it is necessary to leave your spa unattended for long periods of time during cold weather conditions, you should drain your spa to avoid accidental freezing caused by power outages. Your Coast Spas dealer can perform the following winterizing procedures, if you are not completely comfortable with them.

- Refer to the DRAINING YOUR COAST SPA section.
- After draining, your Coast Spa may still have water remaining in the equipment and plumbing fittings. Disconnect the hand-tightened union fittings going

to and from the jet pumps. Be careful not to lose the o-rings between the unions and pump housing.

- Leave drain valve in the open position and safety cap off.
- To completely drain the plumbing lines, a wet/dry shop vac can be used to draw out any remaining water. Place the vac hose over the jet fittings in the spa as well as the plumbing lines in the equipment area.
- Remove the filter cartridge and store in a warm, dry area.
- Clean the spa shell and place spa cover on spa. Be sure to lock the cover in place in case of high winds or rain.

EMERGENCY SITUATIONS: To eliminate freezing in the event of equipment failure, use a 100-watt light bulb or small heater via extension cord and place it in the equipment area, keeping it away from plumbing lines. This will help for a short period of time until proper service can be rendered.

HOME THEATER SERIES

- Before you start using Coast Spas' Home Theater system, locate your floating remote control or B.O.S.S. (Buoyant Operating Spa System) control.
- Your Coast Home Theater series spa comes with a 12-volt DC 17-inch LCD monitor, DVD player and Sony Radio/CD player. These items along with other electronics carry a separate manufacturer's warranty. Please contact your dealer for details.
- The Coast Spas B.O.S.S. and floating remote control operate the DVD player, Sony Radio/CD player and LCD Monitor with basic commands; i.e., On/Off, Play, Stop, Channel-Up, Channel-Down, Skip and Switch between DVD/CABLE Modes. Other settings are available with the manufacturer remote controls which are not waterproof! Included electronic components have been programmed and tested by Coast Spas technicians. If you decide to modify settings (not recommended), make sure you read all the instructions found in the device's User's Manual carefully. We strongly recommend using only Coast Spas' universal waterproof floating remote control!

B.O.S.S. HANDHELD REMOTE CONTROL

The B.O.S.S. (Buoyant Operating Spa System) is the industry's best remote control — waterproof and designed to provide hours of trouble-free usage.

For best results, please remove the control from the water when the spa is not in use. Prolonged exposure to the hot water in your spa may create humidity built-up inside your control. This will not affect the operation of the remote but it may alter its appearance.

Please read the instructions provided in this manual carefully to ensure optimal use of your B.O.S.S. remote control.

THE B.O.S.S. HANDHELD REMOTE CAN CONTROL THE FOLLOWING DEVICES:

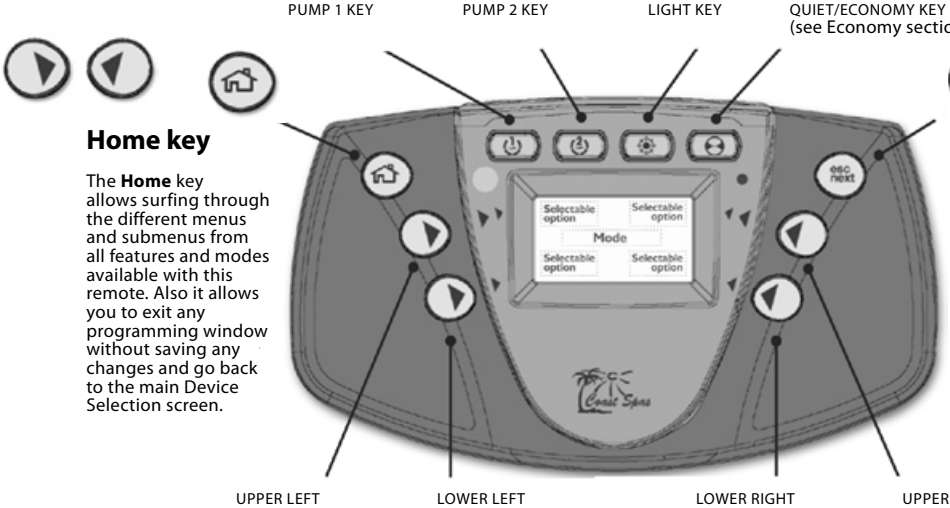
- Spa
- Audio equipment (CD, Tuner)
- Video equipment (TV, VCR and DVD)

THE B.O.S.S. HANDHELD REMOTE CONTROL

REMOTE KEYS

Multifunction keys

Each of these four keys helps you to select and/or execute the indicated function (pointed by the arrows) displayed on the screen in any given window. in this way, the task performed by a given multifunction key will vary depending on the menu or window.



Home key

The **Home** key allows surfing through the different menus and submenus from all features and modes available with this remote. Also it allows you to exit any programming window without saving any changes and go back to the main Device Selection screen.

Esc/Next key

The **Esc/Next** key allows surfing through the various windows and options of any given menu. Also it allows you to exit any programming window without saving any changes and go back to the previous screen.

THE B.O.S.S. HANDHELD REMOTE FEATURES THE FOLLOWING:

- Multifunction device keys
- Spa status monitoring from inside your home
- Data transmission up to 15 feet (must align remote in front of spa receiver)
- Data reception up to 150 feet (distance may vary depending on obstacles such as walls, etc. Should this happen, try a different and more favorable location)
- Ergonomic design
- Floatable
- Totally sealed
- 3 "AAA" Ni-MH rechargeable batteries in watertight compartment (remote control retains values even after having replaced the batteries)
- Speed keys for quick and easy access to main spa functions.

The B.O.S.S. base unit has been conveniently designed to act as receiver-transmitter device as well as a battery charging unit for the B.O.S.S. handheld remote control.

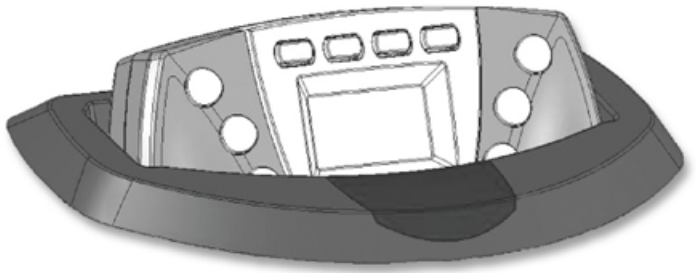
THE B.O.S.S. BASE UNIT FEATURES THE FOLLOWING:

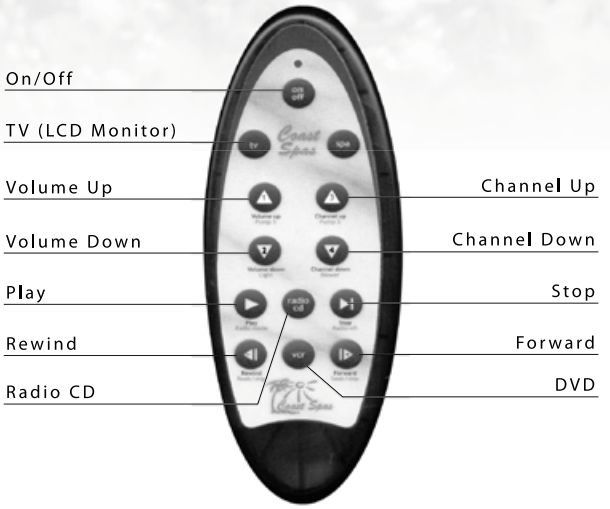
- Built-in RF receiver and RF transmitter.
- Automatic recharge of the Ni-MH batteries used by the handheld remote.
- It's waterproof.

PROGRAMMING YOUR REMOTE CONTROL

For Sony Radio/CD, LCD Monitor and DVD

Before you start, it is important to note that a more than 10-sec delay between key presses automatically cancels Programming Mode. Use the codes required for your devices listed below.



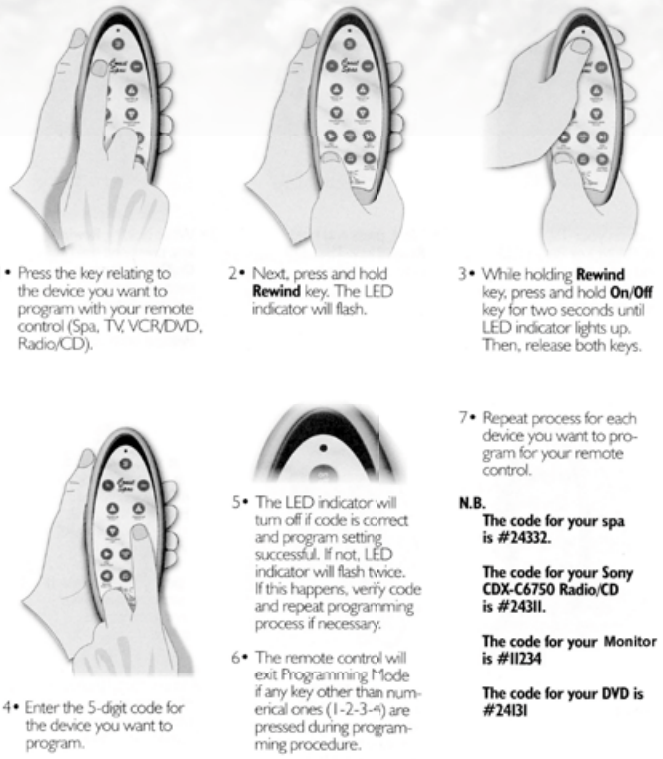


• LCD MONITOR

- To start using LCD monitor press **TV** button.
- **ON/OFF** button powers on or off LCD Monitor.
- **Play** button switches between CABLE/DVD/ COMPUTER modes.
- **Volume UP** button increases volume of the Sony® Radio/CD player.
- **Volume Down** button will decrease volume of the Sony® Radio/CD player.
- **Channel Up** skips to next channel in CABLE mode.
- **Channel Down** skips to previous channel in CABLE mode.
- **Stop** button displays the activated mode.
- In order to set the audio for DVD/CABLE, turn on the Radio/CD player by pressing **ON/OFF** button on floating remote control. Press the button again to switch to AUX (auxiliary input).
- The CABLE/TV connection is located in the lower right hand corner of the stereo enclosure. Simply plug in a standard cable line to this connection for start-up.

• SONY® RADIO/CD PLAYER

- To start using Sony Radio/CD player, press **RADIO CD** button.
- **ON/OFF** button activates the Sony® Radio/CD player. When the power is on, this button allows you to switch between sources Radio AM/FM TUNER and AUX. The Monitor is connected to auxiliary in order to get the sound from DVD or Cable/TV.


1• Press the key relating to the device you want to program with your remote control (Spa, TV, VCR/DVD, Radio/CD).
2• Next, press and hold **Rewind** key. The LED indicator will flash.
3• While holding **Rewind** key, press and hold **On/Off** key for two seconds until LED indicator lights up. Then, release both keys.
4• Enter the 5-digit code for the device you want to program.
5• The LED indicator will turn off if code is correct and program setting successful. If not, LED indicator will flash twice. If this happens, verify code and repeat programming process if necessary.
6• The remote control will exit Programming Mode if any key other than numerical ones (1-2-3-4) are pressed during programming procedure.
7• Repeat process for each device you want to program for your remote control.
N.B.
The code for your spa is #24332.
The code for your Sony CDX-C6750 Radio/CD is #24311.
The code for your Monitor is #11234
The code for your DVD is #24131

- **Volume UP** button increases volume of the Sony® Radio/CD player.
- **Volume Down** button decreases volume of the Sony® Radio/CD player.
- **Channel Up** seeks the next radio station or skips to next CD track.
- **Channel Down** seeks the previous radio station or skips to previous CD track.
- **Play** button switches between AM/FM modes.
- **Stop** button turns off the Sony® Radio/CD player.

• DVD PLAYER

- To start using DVD player you must first turn on the LCD Monitor and set it to Video mode (DVD).
- Press **VCR** button on your floating remote control.
- **ON/OFF** button will power on or off DVD player.
- **Volume UP** button increases volume of the Sony® Radio/CD player.
- **Volume Down** button decreases volume of the Sony® Radio/CD player.
- **Play** button starts playing DVD.
- **Stop** button stops playing DVD.
- **Forward** button skips forward to next chapter.
- **Rewind** button skips backwards to previous chapter.
- In order to set the audio for DVD/CABLE, turn on the Radio/CD player by pressing **ON/OFF** button on floating remote control. Press the button again to switch to **AUX** (auxiliary input).

SONY STEREO SPAS (SOUND WAVES™ SERIES)

For spa units made with the stereo/CD option:

- For Coast and Coast XLT series, the stereo can be controlled by the stereo's remote, floating remote control or B.O.S.S. (which is an option), or topside control panel. The floating remote and B.O.S.S. also control the functions of the spa.
- If your Spa is equipped with manually activated popup speakers, simply push down on the speaker surface for speaker to rise up. To lower, push speaker housing surface down until it locks in place.

SONY® STEREO (EXTREME SOUND™) OPTION

- If your spa is equipped with the SONY® AMPLIFIER, the Amplifier will turn on after you activate the stereo (whether by remote controls or manually).

MP3/iPOD-COMPATIBLE SOUND OPTION

- Your spa may include the MP3-compatible sound option, which allows you to connect your personal music device to your Coast spa. This option is available on certain series as a standalone MP3 connection, in which case volume and other adjustments can only be set through the MP3 player's controls. You may also have the MP3 connection as an additional option to your Sony AM/FM CD stereo system. On this option, volume may be controlled through your Sony stereo controls and/or remote control.

MP3 PLUG-IN WINDOW
(WITH SLIDING DOOR)

WATER QUALITY MAINTENANCE

Maintaining the quality of the water within specified limits will serve to enhance your enjoyment and prolong the life of the hot tub's equipment. It is a fairly simple task, but it requires regular attention because the water chemistry involved is a balance of several factors. There is no simple formula, and there is no avoiding it. A careless attitude in regard to water maintenance will result in poor and potentially harmful conditions for soaking and even damage to your hot tub investment. For specific guidance on maintaining water quality, consult your Authorized Coast Spas Dealer who can recommend appropriate chemical products for sanitizing and maintaining your hot tub.

CAUTION: Never store hot tub chemicals inside the hot tub's equipment enclosure.

pH Control

pH is a measure of relative acidity or alkalinity of water and is measured on a scale of 0 to 14. The midpoint of 7 is said to be neutral, above which is alkaline and below which is acidic. In hot tub water, IT IS VERY IMPORTANT TO MAINTAIN A SLIGHTLY ALKALINE CONDITION OF 7.2 to 7.8. Problems become proportionately severe the further outside of this range the water gets. A low pH will be corrosive to metals in the hot tub equipment. A high pH will cause minerals to deposit on the interior surface (scaling). In addition, the ability of the sanitation agents to keep the hot tub clean is severely affected as the pH moves beyond the ideal range. That is why almost all hot tub water test kits contain a measure for pH as well as sanitizer.

Sanitizing

To destroy bacteria and organic compounds in the hot tub water, a sanitizer must be used regularly, either chlorine or bromine. Bromine residual of 2 to 3 ppm is generally considered desirable. A two-part bromine system or granular chlorine (Dichlor) can also be acceptable sanitizers. Chlorine residual should be 1 to 3 ppm.

IMPORTANT: Do not use Hydrogen Peroxide based sanitizers in your spa. When using Trichlor chlorine or Bromine tablets you must use a floating dispenser. These chemicals can have an extremely corrosive effect on certain materials in the spa. Damage caused by use of these chemicals, or improper use of any chemicals, is not covered under the spa's warranty.

Other Additives

Many other additives are available for your spa. Some are necessary to compensate for out-of-balance water, some aid in cosmetic water treatment and others simply alter the feel or smell of the water. Your Authorized Coast Spas Dealer can advise you on the use of these additives.

HEADREST / PILLOW CARE

1. Do not sit on pillows.
2. Do not pull on pillows.
3. Proper water chemistry must be maintained. Excessive levels of chlorine, bromine or ozone may damage your pillows.
4. Pillows should be washed when you drain your spa with a mild soap and then wiped with conditioner.
5. When you shock your spa, prop up your cover for a minimum of thirty minutes so excess gases may escape out of spa.

Please be advised that pillows are not a warranty item.

Initial Start-up

Your spa will enter Priming Mode (Pr) when it is energized. **During Priming Mode, press "Jets" button(s) repeatedly and be sure all pumps are free of air.** Priming Mode lasts less than 5 minutes. Press "Temp" to exit. After Priming Mode, the spa will run in Standard Mode (see Mode section). Some panels may not have a "Temp" button. On these panels the "Set," "Warm," or "Cool" buttons are used.

The pump responsible for heating and filtration (pump 1 low-speed on non-circ system, or the circ pump on circ systems) will be referred to simply as the pump.

In multi-button sequences, if the buttons are pressed too quickly in sequence, they may not register.

Button shapes and labels may vary.

Temp Control (80°F - 104°F / 26°C - 40°C)

The last measured water temperature is constantly displayed.

The water temperature displayed is current only when the pump has been running for at least 2 minutes.

On panels with a single "Temp" or "Set" button, to display the set temperature, press the button once. To change the set temperature, press the button a second time before the display stops flashing. Each press of the button will continue to either raise or lower the set temperature. If the opposite direction is desired, allow the display to revert to the current water temperature. Press the button to display the set temperature, and again to make the temperature change in the desired direction.

On panels with "Warm" and "Cool" buttons, to display the set temperature, press "Warm" or "Cool" once. To change the set temperature, press a temperature button again before the display stops flashing. Each press of "Warm" or "Cool" will adjust the set temperature.

After three seconds, the display will stop flashing and begin to display the current spa temperature.

Jets 1

Press "Jets 1" to turn pump 1 on or off, and to shift between low and high speeds (if equipped). The low-speed will turn off after 4 hours. High-speed will turn off after 15 minutes. Low-speed may run automatically at times, during which it cannot be deactivated from the panel, but high-speed may be operated.

Jets 2/Jets 3/Blower (If equipped)

Press the corresponding button once to turn the device on or off. The device will turn off after 15 minutes. Pump 2 may be two-speed on some systems.

Some systems use this one button to control two devices. The first button press will activate one device. Press again to have both devices active. Press again to turn off the first device only. Press one more time to turn both devices off.

Light

Press "Light" to operate the spa light. Turns off after 4 hours.

Mode

Depending on system configuration, mode changing may not be available and will be locked in Standard Mode.

Mode is changed by pressing "Temp," then "Light".

Standard Mode maintains set temperature. St will be displayed momentarily when you switch into Standard Mode.

Economy Mode heats the spa to the set temperature only during filter cycles. Ec will display when water temp is not current, and will alternate with water temp when the pump is running.

Sleep Mode heats the spa to within 20°F/10°C of the set temperature only during filter cycles. SL will display when water temp is not current, and will alternate with water temp when the pump is running.

Preset Filter Cycles

The first preset filter cycle begins 6 minutes after the spa is energized. The second preset filter cycle begins 12 hours later. Filter duration is programmable for 2, 4, 6, or 8 hours or for continuous filtration (indicated by FC). The default filter time is 2 hours for non-circ systems and 4 hours for circ systems.

To program, press "Temp," then "Jets 1." Press "Temp" to adjust. Press "Jets 1" to exit programming.

For non-circ systems, low-speed pump 1 and the ozone generator (if installed) run during filtration.

For circulation systems, the circ pump and the ozone generator (if installed) run 24 hours. In hot environments, the circ pump may turn off for 30 minute periods, except during filter cycles. At the beginning of each filter cycle all other equipment will run briefly to purge the plumbing.

This document covers VS and GS systems 500Z through 521Z with Balboa Panels VL200 through VL406.
www.balboa-instruments.com

Diagnostic Messages

Message	Meaning	Action Required
	No message on display. Power has been cut off to the spa.	The control panel will be disabled until power returns. Spa settings will be preserved until next power up.
--	Temperature unknown.	After the pump has been running for 2 minutes, the current water temperature will be displayed.
HH	"Overheat" - The spa has shut down.* One of the sensors has detected 118°F/47.8°C at the heater.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. Once the heater has cooled, reset by pushing any button. If spa does not reset, shut off the power to the spa and call your dealer or service organization.
OH	"Overheat" - The spa has shut down.* One of the sensors has detected that the spa water is 110°F/43.5°C.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. At 107°F/41.7°C, the spa should automatically reset. If spa does not reset, shut off the power to the spa and call your dealer or service organization.
SA	Spa is shut down.* The sensor that is plugged into the Sensor "A" jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat condition.)
Sb	Spa is shut down.* The sensor that is plugged into the Sensor "B" jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat condition.)
Sn	Sensors are out of balance. If alternating with spa temperature, it may just be a temporary condition. If flashing by itself, spa is shut down.*	If the problem persists, contact your dealer or service organization.
HL	A significant difference between temperature sensors has been detected. This could indicate a flow problem.	If the water level is normal, make sure all pumps have been primed. If problem persists, contact your dealer or service organization.
LF	Persistent low flow problems. (Displays on the fifth occurrence of HL message within 24 hours.) Heater is shut down, but other spa functions continue to run normally.	Follow action required for HL message. Heating capability of the spa will not reset automatically; you may press any button to reset.
dr	Possible inadequate water, poor flow, or air bubbles in detected in the heater. Spa is shut down for 15 minutes.	If water level is normal, make sure all pumps have been primed. Press any button to reset. This message will reset within 15 minutes. If problem persists, contact your dealer or service organization.
dY	Inadequate water detected in heater. (Displays on third occurrence of dr message.) Spa is shut down.*	Follow action required for dr message. Spa will not automatically reset. Press any button to reset manually.
IC	"Ice" - Potential freeze condition detected. ** - Even when spa is shut down, some equipment will turn on if freeze protection is needed.*	No action required. All equipment will automatically activate regardless of spa status. The equipment stays on 4 minutes after the sensors detect that the spa temperature has risen to 45°F/7.2°C or higher. An optional freeze sensor may be added to protect against extraordinary freeze conditions. Auxiliary freeze sensor protection is advisable is colder climates. See your dealer for details.

Warning! Shock Hazard! No User Serviceable Parts.

Do not attempt service of this control system. Contact your dealer or service organization for assistance. Follow all owner's manual power connection instructions. Installation must be performed by a licensed electrician and all grounding connections must be properly installed.

P/N 40789_D 12/19/2007

Initial Start-up

Your spa will enter Priming Mode (Pr) when it is energized. **During Priming Mode, press "Jets" button(s) repeatedly and be sure all pumps are free of air.** Priming Mode lasts for less than 5 minutes. Press "Warm" or "Cool" to exit. After Priming Mode, the spa will run in Standard Mode (see Mode section).

The pump responsible for heating and filtration (pump 1 low-speed on non-circ system, or the circ pump on circ systems) will be referred to simply as the pump.

In multi-button sequences, if the buttons are pressed too quickly in sequence, they may not register.

Button shapes and labels may vary.

Temp Control (80°F - 104°F / 26.0°C - 40.0°C)

The last measured water temperature is constantly displayed.

The water temperature displayed is current only when the pump has been running for at least 2 minutes.

To display the set temperature, press "Warm" or "Cool" once. To change the set temperature, press a temperature button again before the display stops flashing. After three seconds, the display will stop flashing and begin to display the current spa temperature.

Jets 1

Press "Jets 1" to turn pump 1 on or off, and to shift between low and high speeds (if equipped). The low-speed will turn off after 4 hours. High-speed will turn off after 15 minutes. Low-speed may run automatically at times, during which it cannot be deactivated from the panel, but high-speed may be operated.

Jets 2/Jets 3/Blower (If equipped)

Press the corresponding button once to turn the device on or off. The device will turn off after 15 minutes. Pump 2 may be two-speed on some systems.

Light

Press "Light" to operate the spa light. Turns off after 4 hours.

Mode

Mode is changed by pressing "Warm" or "Cool," then pressing "Mode."

Standard Mode maintains set temperature. Std will be displayed momentarily when you switch into Standard Mode.

Economy Mode heats the spa to the set temperature only during filter cycles. Ecn will display when water temp is not current, and will alternate with water temp when the pump is running.

Sleep Mode heats the spa to within 20°F/10°C of the set temperature only during filter cycles. SLP will display when water temp is not current, and will alternate with water temp when the pump is running.

Preset Filter Cycles

The first preset filter cycle begins 6 minutes after the spa is energized. The second preset filter cycle begins 12 hours later. Filter duration is programmable for 2, 4, 6, or 8 hours or for continuous filtration (indicated by F ILC). The default filter time is 2 hours for non-circ systems and 4 hours for circ systems.

To program, press "Warm" or "Cool," then "Jets 1." Press "Warm" or "Cool" to adjust. Press "Jets 1" to exit programming.

For non-circ systems, low-speed pump 1 and the ozone generator (if installed) run during filtration.

For circulation systems, the circ pump and the ozone generator (if installed) run 24 hours. In hot environments, the circ pump may turn off for 30 minute periods, except during filter cycles. At the beginning of each filter cycle all other equipment will run briefly to purge the plumbing.

Diagnostic Messages

Message	Meaning	Action Required
	No message on display. Power has been cut off to the spa.	The control panel will be disabled until power returns. Spa settings will be preserved until next power up.
`--`	Temperature unknown.	After the pump has been running for 2 minutes, the current water temperature will be displayed.
`OHH`	"Overheat" - The spa has shut down.* One of the sensors has detected 118°F/47.8°C at the heater.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. Once the heater has cooled, reset by pushing any button. If spa does not reset, shut off the power to the spa and call your dealer or service organization.
`OHS`	"Overheat" - The spa has shut down.* One of the sensors has detected that the spa water is 110°F/43.5°C.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. At 107°F/41.7°C, the spa should automatically reset. If spa does not reset, shut off the power to the spa and call your dealer or service organization.
`SnA`	Spa is shut down.* The sensor that is plugged into the Sensor "A" jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat condition.)
`Snb`	Spa is shut down.* The sensor that is plugged into the Sensor "B" jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat condition.)
`SnS`	Sensors are out of balance. If alternating with spa temperature, it may just be a temporary condition. If flashing by itself, spa is shut down.*	If the problem persists, contact your dealer or service organization.
`HFL`	A significant difference between temperature sensors has been detected. This could indicate a flow problem.	If the water level is normal, make sure all pumps have been primed. If problem persists, contact your dealer or service organization.
`LF`	Persistent low flow problems. (Displays on the fifth occurrence of `HFL` message within 24 hours.) Heater is shut down, but other spa functions continue to run normally.	Follow action required for `HFL` message. Heating capability of the spa will not reset automatically; you may press any button to reset.
`dr`	Possible inadequate water, poor flow, or air bubbles in detected in the heater. Spa is shut down for 15 minutes.	If water level is normal, make sure all pumps have been primed. Press any button to reset. This message will reset within 15 minutes. If problem persists, contact your dealer or service organization.
`drY`	Inadequate water detected in heater. (Displays on third occurrence of `dr` message.) Spa is shut down.*	Follow action required for `dr` message. Spa will not automatically reset. Press any button to reset manually.
`ICE`	"Ice" - Potential freeze condition detected. ** - Even when spa is shut down, some equipment will turn on if freeze protection is needed.*	No action required. All equipment will automatically activate regardless of spa status. The equipment stays on 4 minutes after the sensors detect that the spa temperature has risen to 45°F/7.2°C or higher. An optional freeze sensor may be added to protect against extraordinary freeze conditions. Auxiliary freeze sensor protection is advisable is colder climates. See your dealer for details.

Warning! Shock Hazard! No User Serviceable Parts.

Do not attempt service of this control system. Contact your dealer or service organization for assistance. Follow all owner's manual power connection instructions. Installation must be performed by a licensed electrician and all grounding connections must be properly installed.

P/N 40790_C 12/19/2007

*The **Quick Reference Card** provides a quick overview of your spa's main functions and the operations accessible with your digital control pad.*

Starting Pump 1:

Press **Pump 1** key to turn Pump 1 on at low speed. Press a second time to turn Pump 1 to high speed. A third time turns Pump 1 off. A built-in timer automatically turns Pump 1 off after 20 minutes, unless it has been manually deactivated.

The "Pump 1" indicator lights up when Pump 1 is on.

Starting Pump 2:

Press **Pump 2** key to turn Pump 2 on. Press a second time to turn Pump 2 off. A built-in timer auto-matically turns Pump 2 off after 20 minutes, unless it has been manually deactivated.

The "Pump 2" indicator lights up when Pump 2 is on.

Turning the light on:

Press **Spa Light** key to turn light on. Press a second time to turn light off. A built-in timer automatically turns light off after 2 hours, unless it has been manually deactivated.

The "Light" indicator is displayed when light is on.

Setting water temperature:

Press and hold **Warm/Cool** key once to increase temperature. To decrease, press and hold **Warm/Cool** key again. The temperature setting will be displayed for 5 seconds to confirm your new selection.

The "Set Point" indicator displays the desired temperature, NOT the current water temperature!

Water temperature can be adjusted by 1˚ increments from 59 to 104˚F (15 to 40˚C).

Automatic water heater start:

When water temperature is 1˚F (0.5˚C) lower than the Set Point, the heater will automatically turn on until water temperature reaches the Set Point plus 1˚F (0.5˚C).

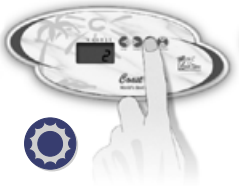
The "Heater" indicator lights up when the heater is on.

Note: If your system is configured in Low Current Mode, the heater will not start if a pump is running at high speed.

Programming the filter cycle duration:

The system automatically performs two filter cycles per day, at 12-hour intervals. During a filter cycle, Pump 2 runs for one minute, then Pump 1 runs for the programmed number of hours and the ozonator is activated.

To set the filter cycle duration:



Press and hold **Spa Light** key for 5 seconds. The display will show the currently set filter cycle duration in hours.

Use **Warm/Cool** key to change setting.

0 = no filtration
12 = continuous filtration

When the desired setting is displayed, press **Spa Light** key to confirm. A filter cycle will start.

The "Filter Cycle" indicator lights up when the filter cycle is on.

An irregularly flashing "Filter Cycle" indicator means that the system has stopped filtering after 3 hours because water temperature exceeds the Set Point by more than 2˚F (1˚C). If the temperature cools down to 1˚F (0.5˚C) above Set Point before the scheduled end of the cycle, filtering will resume for the remainder of the programmed duration.

After a power failure, the filter cycle duration will return to its default value (6 hours). In this case, the first filter cycle will start 12 hours after power has been restored.

Troubleshooting:

The "Heater" indicator is flashing when pumps are running at high speed.

Not a bug but a feature!

The heater is automatically turned off when pumps are running at high speed to limit the electrical current draw.

Pumps have started up for one minute on several occasions and "Filter Cycle" indicator is flashing.

Not a bug but a feature!

Our **Smart Winter Mode** protects your spa from the cold by automatically turning pumps on for one minute several times a day to prevent water from freezing in pipes.

Water temperature is flashing.

Water temperature in the spa has reached 112˚F (44˚C).

Do not enter the water! Allow the water to cool down. The system will reset automatically when water reaches 109˚F (43˚C).

Call your dealer or service supplier if problem persists.

3 flashing dots are displayed.

A problem has been detected.

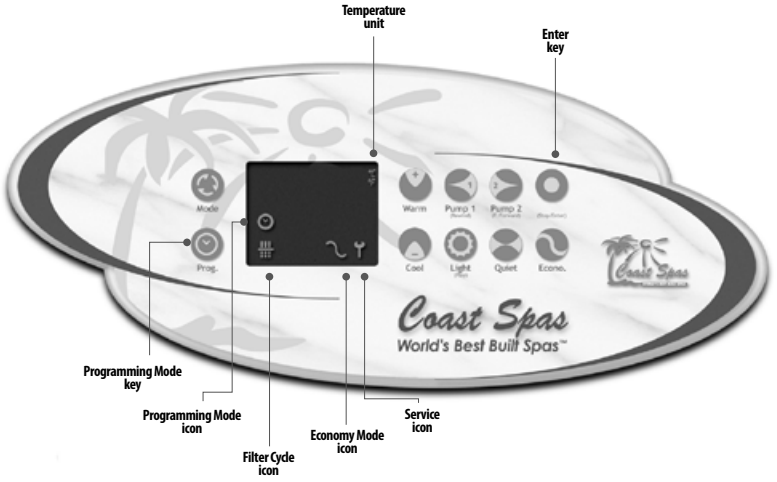
Do not enter the water! Check and open water valves. Clean filter if necessary. Check water level. Add water if needed.

Shut power off and power your spa up again to reset the system.

Call your dealer or service supplier if problem persists.

The display is flashing.

A power failure has occurred. Press any key to reset the system, then reprogram all desired parameters.



Service message

Every 8,000 hours of use, the spa will display a "SER" message that will indicate that it is time for your spa check-up.

Time of day

Setting the time:

1- Enter Programming mode by holding **Prog.** key pressed down for 2 seconds. The "CL" message is displayed.
2- Press **Enter** key to display the current setting.
3- Use **Warm** or **Cool** arrow key to change setting.

Filter cycle start time & duration

The system automatically performs two filter cycles per day, at 12-hour intervals. During a filter cycle, Pump 2 and blower run for one minute then Pump 1 (or circulation pump if installed) runs at low speed for the programmed number of hours. "Filter Cycle" icon is on during a filter cycle.

To program a filter cycle, you must enter two parameters: the start time of the cycle and its duration. If no filtering is required, the duration must be set to "OFF". If continuous filtering is required, the duration must then be set to "12:00".

Setting filter cycle start time:

1- Press **Prog.** key a second time.
2- The display will show "Flon", with "xx" representing the starting hour.
3- Press **Enter** key to display the current setting.
4- Use **Warm** or **Cool** arrow key to change setting.

Setting filter cycle duration:

1- Press **Prog.** key a third time.
2- The display will show "Fldu", with "xx" representing the duration in hours.
3- Press **Enter** key to display the current setting.
4- Use **Warm** or **Cool** arrow key to change setting.

Economy mode start time & duration

The Economy mode allows you to lower the temperature Set Point of the spa by 20°F (11°C) during a certain period of the day. When in Economy mode, the "Economy Mode" icon is displayed.

To program the Economy mode, you must enter two parameters: the start time and the duration. If the Economy mode is not required, the duration must be set to "OFF".

You can manually override the current Economy status (on or off) for the rest of the day by pressing **Econo.** key.

Setting Economy mode start time:

1- Press **Prog.** key a fourth time.
2- The display will show "ECon", with "xx" representing the starting hour.
3- Press **Enter** key to display the current setting.
4- Use **Warm** or **Cool** arrow key to change setting.

Setting Economy mode duration:

1- Press **Prog.** key a fifth time.
2- The display will show "ECdu", with "xx" representing the duration in hours.
3- Press **Enter** key to display the current setting.
4- Use **Warm** or **Cool** arrow key to change setting.

Temperature unit

Water temperature can be displayed in °F or °C.

Selecting the temperature display unit:

1- Press **Prog.** key a sixth time.
2- The display will show "Tu", with "x" for either °F or °C.
3- Press **Enter** key to display the current setting.
4- Use **Warm** or **Cool** arrow key to change setting.

Keypad lockout

This function allows you to prevent unauthorized parameter setting of the unit. The basic functions of the spa will remain accessible (pump and light outputs) but it will be impossible to change the temperature Set Point, to override the Economy mode or to enter the Programming mode.

When the keypad is locked, the "Lock" icon will be displayed.

Locking the keypad:

1- Press **Prog.** key a seventh time.
2- The display will show "Loc" or "Uloc".
3- Press **Enter** key to display the current setting.
4- Use **Warm** or **Cool** arrow key to change setting.

To unlock the keypad, press and hold **Pump 1** key for 5 seconds.

Inverting the display

A simple key press sequence inverts the display to make it readable from inside or outside the spa. To invert the display:

1- Press and hold **Prog.** key for 2 seconds. The "CL" message will be displayed.
2- Press **Light** key. The "CL" message will disappear and the display will be inverted. The "°F" or "°C" icon will not be displayed.

Changing modes

The system can be configured in 3 different modes: SPA, VCR and CD. Simply press **Mode** key to change modes. The appropriate icon will light up to indicate which mode you are in. If keypad remains untouched for more than 5 minutes, the system will automatically revert to SPA mode.

In SPA mode:	*In CD/DVD mode:*
Pump 1 key	**Rewind** key
Pump 2 key	**Forward** key
Light key	**Play** key
Stop/Enter key	**Stop** key

In SPA mode:	*In Radio mode:*
Pump 1 key	**Seek -** key
Pump 2 key	**Seek +** key
Light key	**Mode** key (FM1, FM2 & AM)
Stop/Enter key	**Sources** key (On or toggles between CD and Radio mode)

Summary of control panel parameters

CL	Time of day
Flon	Filter cycle start time
Fldu	Filter cycle duration
ECon	Economy mode start time
ECdu	Economy mode duration
Tu	Temperature unit (°F or °C)
Loc	Keypad lockout

*The **Quick Reference Card** provides a quick overview of your spa's main functions and the operations accessible with your digital control pad.*

Starting Pump 1:

Dual-speed pump system:
Press **Pump 1** to turn Pump 1 on at low speed. Press a second time to turn pump to high speed. A third time turns pump off.

Single-speed pump system:
Press **Pump 1** to turn Pump 1 on. Press a second time to turn Pump 1 off.

In both cases, a built-in timer turns Pump 1 off after 20 minutes, unless pump has been manually deactivated first.

The "Pump 1" indicator lights up when Pump 1 is on. With a dual-speed pump, it will flash when Pump 1 is on at low speed.

Starting Pump 2:

Dual-speed pump system:
Press **Pump 2** to turn Pump 2 on at low speed. Press a second time to turn pump to high speed. A third time turns pump off.

Single-speed pump system:
Press **Pump 2** to turn Pump 2 on. Press a second time to turn Pump 2 off.

In both cases, a built-in timer turns Pump 2 off after 20 minutes, unless pump has been manually deactivated first.

The "Pump 2" indicator lights up when Pump 2 is on. With a dual-speed pump, it will flash when Pump 2 is on at low speed.

Turning fiber light on:

Press **Fiber Light** key to turn motor and light on. Press a second time to turn both motor and light off.

Fiber box option:
Press **Fiber Light** key to turn fiber box (motor & light) on. Press a second time to turn fiber box motor off and leave light on. A third time turns both motor and light off.

In both cases, a built-in timer automatically turns fiber light off after 2 hours, unless fiber light has been manually deactivated first.

Automatic water heater start:

When water temperature is 0.5˚C (1˚F) lower than the Set Point, the heater will automatically turn on until water temperature reaches Set Point plus 0.5˚C (1˚F).

The "Heater" indicator lights up when the heater is on. It flashes when there is a request for more heat but the heater has not yet started.

Note: If your system is configured in Low Current mode, the heater will not start if two pumps or more are on at high speed.

Starting the blower:

Press **Blower** to turn blower on at high speed. Press a second time to turn blower to low speed. A third time turns blower off. A built-in timer automatically turns blower off after 20 minutes, unless manually deactivated first.

The "Blower" indicator lights up when blower is on at high speed. It flashes when blower is on at low speed.

Turning the light on:

Two-intensity spa light:
Press **Light** key to turn light on at high intensity. Press a second time to turn light to low intensity. A third time turns light off.

One-intensity spa light:
Press **Light** key to turn light on. Press a second time to turn light off.

In both cases, a built-in timer turns light off after 2 hours, unless manually deactivated first.

The "Light" indicator is displayed when light is on at high intensity. It flashes when light is on at low intensity.

Setting water temperature:

Use **Warm** or **Cool** arrow key to regulate water temperature. The temperature setting will be displayed for 5 seconds to confirm your new selection.

The "Set Point" symbol indicates the desired temperature, NOT the current water temperature!

Water temperature can be adjusted by 1˚ increments from 15 to 40˚C (59 to 104˚F).

Troubleshooting

Water temperature is flashing.

Water temperature in the spa has reached 44˚C (112˚F).

Do not enter the water! Allow water to cool down. The system will reset automatically when water temperature reaches 43˚C (109˚F).

Call your dealer or service supplier if problem persists.

3 flashing dots are displayed.

A problem has been detected.

Do not enter the water! Check and open water valves. Clean filter if necessary. Check water level. Add water if needed. Shut power off and power the spa up again to reset the system.

Call your dealer or service supplier if problem persists.

Pumps have started up for one minute on several occasions and "Filter Cycle" indicator is flashing.

Not a bug but a feature!

Our **Smart Winter Mode** protects your system from the cold by automatically turning pumps on for one minute several times a day to prevent water from freezing in pipes.

The display is flashing.

A power failure has occurred. Press any key to reset the system, then reprogram all desired parameters.

Off mode

Press and hold **Fiber Light** key for 5 seconds to turn the system down (i.e. to set it to Off mode) for 30 minutes. The "OFF" message is displayed. All keys are then disabled, unless you press **Fiber Light** key to reactivate the system before the expiration of the 30-minute delay.

Temperature unit

Press and hold **Light** key for 5 seconds to toggle between °C and °F.

Inverted display

Press and hold **Filter** key for 5 seconds to invert the display. If a power-up occurs, the display always returns to default mode.

Filter cycles

The system automatically performs 2 filter cycles per day, at 12-hour intervals. During a filter cycle, Pumps 2 & 3 and blower run for one minute. Pump 1 then runs at low speed for the remaining of the cycle and "Filter Cycle" icon lights up. (If system is equipped with a circulation pump, all pumps and blower run for one minute. Circulation pump then runs for the remaining of the cycle and "Filter Cycle" icon lights up.)

Setting filter cycles:

1- Press **Filter** key.
Fd10 2- The display will show **Fdxx**, with "xx" representing the duration in hours.
3- Use **Warm** and **Cool** arrows to change setting.
4- Press **Filter** key again.
FS 6 5- The display will show **FSxx**, with "xx" representing the delay before cycle starts.
6- Use **Warm** and **Cool** arrows to change setting.
7- Press **Filter** key to store settings.

40-minute filter cycle time-out: If you turn a pump, blower or light on during a filter cycle, the cycle will be interrupted and will only resume 40 minutes after the system has turned the last active output off.

Purge cycles

During a purge cycle, pumps and blower run for two minutes and "Filter Cycle" icon lights up.

Setting purge cycles:

1- Press **Filter** key.
P 24 2- The display will show **P xx**, with "xx" representing the currently set number of daily purge cycles.
3- Use **Warm** and **Cool** arrows to change setting.
4- Press **Filter** key to store settings.

Note: The system may be installed to support 24-hour filtering with a circulation pump. In this case, pressing **Filter** *key will allow you to set the number of purge cycles per day.*

Boost filtration mode

This function allows you to speed up filtration after intensive use of your spa or to mix chemicals. Simply keep **Pump 1** key pressed down for 5 seconds. Pump 1 will run at high speed for 45 minutes and "BOO" message will be displayed. Ozonator is also activated.

Water level sensor

If the system is equipped with an optional water level sensor and the sensor detects an insufficient level of water in the tub, the system will prevent pumps from starting and will display the "H20" message. Pumps will be allowed to turn back on when water level returns above sensor.

Digital control pad lockout

This function allows you to prevent unauthorized parameter settings. This feature is especially helpful when young children have access to the keypad.

There are two modes you can choose from: *Full* lock or *Partial* lock. *Full* lock means that all keypad functions are locked. *Partial* lock means that the basic functions of the spa will remain accessible (pumps, blower and light), but it will be impossible to change the temperature Set Point, to override the Economy mode or to enter the Programming mode.

When control pad is locked, the "Lock" icon will be displayed.

Locking your digital control pad:

1- Press and hold **Econo** key for 5 seconds.
LocP 2- The display will show **LocP**, with "P" representing *Partial* lock.
LocF 3- Release key and keypad will be in *Partial lock mode*. Keep key pressed down for 5 more seconds if you want to be in *Full* lock mode. The "LocF" message will then be displayed.

When control pad is locked, all automatic functions of the system run as usual. If a key is pressed down, a "LocP" or "LocF" message will be displayed for 1 second. To unlock the keypad, simply press and hold **Econo** key again for 5 seconds.

Economy mode

To save energy, the Economy mode Set Point is 11°C (20°F) below the Normal mode Set Point.

The "Economy Mode" icon lights up when Economy mode is on.

Setting Economy mode:

1- Press **Econo** key.
Ed12 2- The display will show **Edxx**, with "xx" representing the Economy mode duration.
3- Use **Warm** or **Cool** key to change setting.
4- Press **Econo** key again.
ES20 5- The display will show **ESxx**, with "xx" representing the delay before mode starts.
6- Use **Warm** and **Cool** arrows to change setting.
7- Press **Econo** key a third time to store settings.

40-minute Economy mode time-out: If you turn a pump, blower or light on while Economy mode is on, the Economy mode will be interrupted and will only resume 40 minutes after the system has turned the last active output off. The "Econ" message or "Economy Mode" icon will flash, depending on your system configuration.

"CLE" message

Every two weeks, the "CLE" message will be displayed indicating to clean the filter (depending on your spa configuration). Press any key to reset the message.

Real-time clock

Use **Clock** key to set real-time clock. The display toggles every 5 seconds alternately showing the hourly time and the current water temperature.

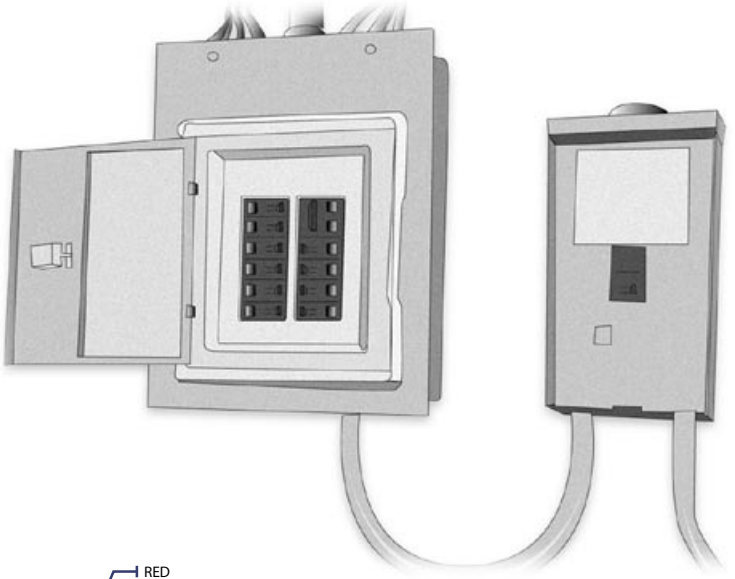
Summary of control panel parameters

Fdxx Filter cycle duration
FSxx Filter cycle delay
LocX Control pad lockout
Edxx Economy mode duration
ESxx Economy mode delay
P xx Purge cycles

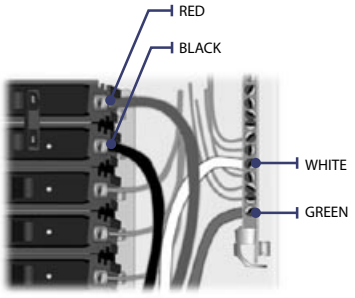
Electrical Wiring - Diagram 02
(North American customers only)

Correct wiring of the electrical service box, GFCI box and pack terminal block is essential.

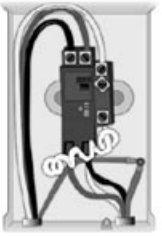
Note: International customers should see their local authorized Coast Spas Dealer for Electrical Wiring Requirements.



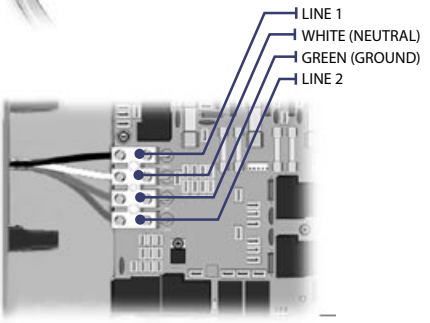
- Carry out a visual inspection to check for signs of miswiring.
- Refer to supplied wiring diagrams. Call an electrician if necessary.



Electrical Box



GFCI



TSPA-MP

GLOSSARY OF TERMS

AIR CONTROL: Mounted generally on the lip of the spa, it induces warm air from the equipment enclosure into the jet stream through venturi action.

AIR RELIEF VALVE: Located on top of dome filter lid. Used to release air on a pressure filter (Cascade model only).

BLEEDER VALVE: Located on the wet end of pump #1 and pump #2. Used for releasing air from the pumping system.

COAST ZONE OZONATOR: Available as an option. The ozonator produces natural ozone through Corona Discharge. Continuous use of an ozonator can dramatically reduce sanitizer consumption.

CHECK VALVE: To prevent water back flow into ozonator.

CONTROL BOX: Basically the "heart" of the spa. Power is distributed to any/or all functions of the spa: pumps, ozonators, LED lighting, heater element, etc.

CONTROL PANEL: Mounted on the top lip of the spa and controls the functions of the spa.

DRAIN VALVE: Used in draining of the spa. Normally located in the lower left hand corner of the spa skirt. See Equipment Enclosure on Pg. 18.

EQUIPMENT ENCLOSURE: An enclosure that houses the control box, pump(s) and other electrical components.

FILTER: The filter cleans the spa by passing water through a filter cartridge where debris and impurities are removed. Top load filter means the filter cartridge is accessible through the top of the spa. Front access skimmer means cartridge is accessed through door of skimmer.

FLOATING REMOTE: A remote control that controls spa functions as well as the DVD player and the Sony radio/CD. The unique design allows it to float on the water surface.

FLOOR DRAIN: The floor drain is covered by a grate-type cover and is utilised when draining the spa. It also acts as the return for the ozonator. You will see bubbles emitted from this drain, which is the result of water mixing with the ozone output.

GATE VALVES: Red with a grey handle is located at the inlet and outlet of the pumping system. Used while servicing the spa equipment, the valves open or close the water flow to the equipment. To remain open for normal use, turn fully counterclockwise.

HEATER: The thermostatically controlled heater raises the temperature of the spa to the desired setting.

JETS:

-LAMINAR FLOW JET: A thin stream of water that arcs from the spa lip. May be backlit by Fiber Optic or LED.

-MASTER MASSAGE JET: A large-aperture jet with multiple nozzles to massage many muscle groups simultaneously.

-NECK JET: Direction-controllable jet for soothing neck massage.

-TRILLIUM ADJUSTABLE CLUSTER JET: Our adjustable, high-intensity hydrotherapy jet.

-TRILLIUM ORBITAL JET: Provides a uni-directional circular therapeutic massage.

-TRILLIUM GATLIN POLY JET: Delivers massage in staccato bursts over a wide area, like a professional masseuse.

-TRILLIUM POLY ORBITAL JET: Provides a uni-directional circular therapeutic massage.

-TRILLIUM POLY DIRECTIONAL JET: Provides a straight flow for a therapeutic massage.

-TRILLIUM DIRECTIONAL JET: Provides a straight flow for a therapeutic massage.

-TRILLIUM FIBER OPTIC JET: Exclusive to Coast, it adds a splash of color to hydrotherapy sessions.

-TRILLIUM VOLCANO/WHIRLPOOL JET: high-output jet on spa floor designed for foot and leg massage.

-TRILLIUM GATLIN JET: Delivers massage in staccato bursts over a narrow, focused area.

-TRILLIUM PULSATING JET: Provides a uni-directional circular therapeutic massage.

KNIFE VALVES: A white "T"-handled valve, same functions as Gate valve (see above), except to open pull up on handle.

LEDs: LEDs and their special lenses can be used to achieve the desired mood lighting in the spa and spa jets.

SKIMMER: This is the rectangular outlet at the water level. The skimmer removes surface debris to the filter. The water level in the spa should be kept at the center of the skimmer for optimum operation.

SUCTION FITTING: During operation of the equipment, the suction works in conjunction with the skimmer to draw water from the bottom of the spa through the filter, keeping the spa sparkling clean.

WATER DIVERTER VALVE (2 sizes): The large diverter is used to divert water to various seats in the spa. The smaller diverter is used to divert water to the neck jets and/or waterfalls. Turn handle only when pump is on low speed.

TROUBLESHOOTING GUIDE

NO HEAT OR HEAT TOO LOW

Probable Cause	Recommended action
Breaker at house OFF.	Reset breaker at house. Breaker can appear to be on and one pole can be off. Turn breaker OFF then ON twice.
Inadequate water flow due to dirty filter.	Clean filter cartridge(s).
Pump not primed.	Refer to the section of this manual on pump priming. O-ring may be missing or damaged on air bleeds.
Improper line voltage.	Have a **licensed electrician** check the line voltage.

SPA LIGHT WON'T COME ON

Probable Cause	Recommended action
Light bulb burnt out.	Replace bulb. (non-warranty)
Dirty connection	Check to see if there is anything covering the connection on the housing that holds the light bulb.

PUMP WILL NOT PRIME

Probable Cause	Recommended action
Pump(s) on but no water flow	Loosen top bleeder valve on pump(s) until water comes out steadily.
No water in pump	Make sure water level in spa is midway in skimmer wall fitting/ bleed top air on face of pump till water flows out.
Air lock	Bleed off air at bleeder valve.
Closed gate valves or blocked lines	Open gate valves/check skimmer, suction for blockage.
Pump surges (jets lose power then come back, then lose power again)	Check filter air relief valve to insure o-ring is in place and is tightly closed. Check union on front of pump to ensure tightness. Check bleeder valve on front of pump to ensure tightness.

JETS WON'T COME ON

Probable Cause	Recommended action
Jets turned off	Turn jet face to open jets.
Pump not primed	Refer to the section in this manual on pump priming.
Gate valves closed	Check that both gate valves are in the up positions.

LOW WATER FLOW

Probable Cause	Recommended action
Dirty filter	Remove filter cartridge and clean.
Closed gate valves or blocked lines	Open all gate valves.
Low voltage or incorrect voltage	Have a licensed electrician check the line voltage.

SPA IS LEAKING

Probable Cause	Recommended action
Loose connection	Hand tighten all quick disconnects and fittings, check gaskets and o-rings.
If water appears near, below filter area	Splashing water into the filter canister area will drain slowly to the base.

PUMP MOTOR DOESN'T RUN

Probable Cause	Recommended action
No power to motor	Check power switches and circuit breakers. Check motor plug into control panel.
Blown fuse	Replace pump fuse.
Thermal overload has tripped	Wait until motor cools off.
Pump jammed from foreign matter in impeller	Call dealer for recommended action.
Motor overheats during hot days while filtering	Reprogram your controls to cycle during the coolest parts of day or shorter cycles.

PUMP MOTOR RUNS HOT

Probable Cause	Recommended action
Pump ran dry	Call dealer for recommended action.
Motor vent is blocked	Clear debris or obstruction to the motor vent.
Restricted suction lines	Make sure all valves are open and clear suction of debris.

NOTE: These motors will feel hot to the touch. This is normal. The internal overload protector will turn the motor off if there is an overload or high temperature problem.

FLOATING REMOTE DOESN'T WORK

Probable Cause	Recommended action
Low battery power	Replace with new batteries.
Programming of remote is incorrect	Refer to remote control user's instructions included with your spa.

RADIO/CD PLAYER

Problem	Recommended action
If CD player doesn't read CDs:	• Try other CDs. • Clean the CD Player heads (by using special cleaning CD). • Read the Sony instruction book provided to you.

DVD/CABLE

Problem	Recommended action
No sound or video when playing DVD or watching CABLE	• Increase CD player volume. • In order to set the audio for DVD/CABLE, turn on the Radio/CD player by pressing ON/OFF button on floating remote control. Press the button again to switch to AUX (auxiliary input). • Check for the blown LCD Monitor FUSE 5A (fuse #1). • Verify that Monitor mode is at Video (DVD). • Or verify that Monitor mode is at TV (Cable). • Make sure the DVD video disc works with sound/video in other DVD players. • Make sure the monitor is ON. • Verify that the Stereo is NOT on ATT.

LCD MONITOR

Problem	Recommended action
No power	• Check for blown 5A fuse. Fuse #1 in the fuse box. • Using Monitor's original remote control, press ON/Off button, being sure to hold the controller very close to the screen (within four inches).
LCD Monitor doesn't respond to floating remote control or B.O.S.S.	• Reprogram the floating remote control. Follow instructions on how to program floating remote control or B.O.S.S.
No sound	• Increase volume on your stereo with either floating remote control or manually. • With original LCD Monitor remote control, press Volume Up button, being sure to hold the controller very close to the screen (within four inches) until you see volume bar on the screen filed to Maximum. Repeat with original DVD remote control. • Turn on the Radio/CD player by pressing ON/OFF button on floating remote control; press the button again to switch to AUX (auxiliary input).
No picture	• Check if DVD is powered ON. • Check if Monitor is powered ON. • On your floating remote, press TV then PLAY button until display message on your monitor shows VIDEO mode. • Try another channel or input source. • Apply Factory setup with the original Monitor's remote; refer to page 13 of LCD Monitor's owner's manual. Be sure to hold the controller very close to the screen (within four inches).
Only snow appears on the screen	• Check Cable/TV connection; refer to the stereo enclosure image shown in this manual. • With original Monitor's remote, press Auto Scan button. Be sure to hold the controller very close to the screen (within four inches).

AMPLIFIER

Problem	Recommended action
Subwoofer doesn't work	• Check for blown 20A amplifier fuse (in the amplifier). • Adjust Bass setting. Refer to CD player user's manual.

B.O.S.S.

Problem	Recommended action
If B.O.S.S. loses communication:	You have to force the remote to synchronize as follows: • Hold the two bottom keys for 10 seconds (when the communication error message is displayed) • Press on the sync menu • Align remote to cradle for synchronization
If B.O.S.S. remote does not respond:	• Put the remote in the cradle and leave it there for 24 hours to charge • Press on HOME - NEXT - OPTIONS - SLEEP - answer 'yes' • Insert the remote inside the cradle • Spa should then function

INTERNATIONAL CUSTOMERS
AUDIO/VISUAL TROUBLESHOOTING

Problem	Recommended action
There's no picture	• Refer to LCD Monitor troubleshooting presented in this guide. • Using Monitor's original remote, press SOURCE button, being sure to hold the controller very close to the screen (within four inches) until display message on your monitor shows VIDEO.
There's no sound when watching Cable/TV	• With Monitor's original remote control, press **Volume UP** button until you see the volume bar filled up to maximum. • Repeat with DVD remote control. • Turn ON the Modulator Switch found on the right side of the DVD Player and set the Radio to 89.1 FM. • Check the Modulator Fuse 5A (#4 in the fuse box).
DVD will not play	• There's no disc inside (NO DISC message appears on the front of the DVD Player). • Verify that Monitor mode is at Video (DVD). • Make sure the DVD video disc works with sound/video in other DVD players. • Make sure the monitor is ON. • Check for the blown LCD Monitor FUSE 5A (fuse #1). • Disc is upside down in DVD Player. Insert disc correctly, with label side up on disc tray. • The disc has been damaged. Change the disc. • Moisture has condensed inside the player. Remove disc and leave the player turned on for one hour.
The remote doesn't function	• Remove all the obstacles from the path of the IR remote sensor. • Point the remote at the IR sensor on the DVD Player. • Replace the batteries in the remote.